CITY OF LODI
INFORMAL INFORMATIONAL MEETING
"SHIRTSLEEVE" SESSION
CARNEGIE FORUM, 305 WEST PINE STREET
TUESDAY, DECEMBER 18, 2007

An Informal Informational Meeting ("Shirtsleeve" Session) of the Lodi City Council was held Tuesday, December 18, 2007, commencing at 7:00 a.m.

A. ROLL CALL

Present: Council Members – Hansen, Hitchcock, Johnson, Katzakian, and Mayor Mounce

Absent: Council Members – None

Also Present: City Manager King, City Attorney Schwabauer, and City Clerk Johl

B. TOPIC(S)

B-1 "Killelea Substation Tour and Update"

Electric Utility Director George Morrow provided a brief presentation regarding the status of the Killelea Substation project. General topics of discussion included review of the old substation, the demolition process of the residential house that previously stood on the site, the demolition of the previous switchgear, condition of two transformers and the preparation for the foundation, and trenching of conduit routes.

In response to Council Member Johnson, Mr. Morrow stated they are able to handle the current load because they have a little leeway and the substation will be up by May to handle the summer loads.

In response to Council Member Johnson, Mr. Morrow stated the wet weather may affect certain tasks, but the project as a whole will still be completed by May.

In response to Council Member Hitchcock, Mr. Morrow stated the entire site is currently offline and not working. He stated power is rerouted from other areas to serve the existing Killelea service areas.

In response to Mayor Pro Tempore Hansen, Mr. Morrow stated the transformers will be replaced one at a time as needed at a cost of approximately $500,000 each.

In response to Mayor Mounce, Mr. Morrow stated the new layout will provide direct access to the transformers for replacement and maintenance.

In response to Council Member Johnson, Mr. Morrow confirmed that there are two transformers.

In response to Mayor Mounce, Mr. Morrow stated the transformers are as old as the facility itself and will likely need to be replaced in five to ten years.

In response to Council Member Hansen, Mr. Morrow confirmed that the Killelea substation line comes in from the east from an industrial substation.

A brief discussion ensued between Mayor Pro Tempore Hansen, Council Member Johnson, and Mr. Morrow regarding the source of power from the east and west, the need for an additional substation in the west to assist with growth in that area, and fees to fund the substation from expansion and annexation.

In response to Council Member Hansen, Mr. Morrow stated security measures at the facility will include motion detectors, gate alarms, control building alarms, and possibly cameras with the new fiber optics.

In response to Council Member Johnson, Mr. Morrow stated some of the many considerations in deciding whether to replace transformers include test results, analyzing data, and looking at the seals.

In response to Council Member Johnson, Mr. Morrow stated the brick wall will have a graffiti resistant on it and ivy will also be planted.

In response to Mayor Mounce, Mr. Morrow stated that, while graffiti is sometimes a problem along similar walls, proper landscaping will also help.

In response to Council Member Hansen, Mr. Morrow stated the focus of the berm itself is to contain oil in the case of spillage within the site.

In response to Council Member Hitchcock, Mr. Morrow confirmed that the new site will provide better communication with the Supervisory Control and Data Acquisition system and fiber optics, provide additional space on site for maintenance and repairs, there will be no asbestos, and there will be more overall reliability.

In response to Council Member Hitchcock, Mr. Morrow stated the wall will be built on the property line.

In response to Myrna Wetzel, Mr. Morrow stated there is very little sound, if any, that will come through the wall.

C. COMMENTS BY THE PUBLIC ON NON-AGENDA ITEMS

None.

D. ADJOURNMENT

No action was taken by the City Council. The meeting was adjourned at 7:45 a.m.

ATTEST:

Randi Johl
City Clerk

DECLARATION OF POSTING

On Friday, December **14,** 2007, in the City of Lodi, San Joaquin County, California, a copy of the December 18, 2007, Shirtsleeve Session agenda (attached and marked as Exhibit **A)** was posted on the entrance to the construction office at the Killelea Substation, located at **545** E. Locust Street, Lodi.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on December **14,** 2007, at Lodi, California

ORDERED BY:

RANDI JOHL
CITY CLERK

Posted by:

NAME Danielle Rogers
TITLE Senior Administrative Clerk

B-1

CITY OF LODI
COUNCIL COMMUNICATION

™

AGENDA TITLE: **Killelea Substation Tour and Update (EUD)**

MEETING DATE: **December 18,2007**

PREPARED B Y **Electric Utility Director**

RECOMMENDED ACTION: No action needed.

BACKGROUND INFORMATION: The Electric Utility Department (EUD) is in the process of rehabilitating its Killelea Substation located at the intersection of Cherokee and Locust Streets. A contract ($2,921,801) has been awarded by the City Council to Rosendin Electric, Inc. of San Jose, CA who is serving as General Contractor for the project.

Killelea Substation was the first EUD substation having been built in early 1960's. The planned life of an electrical substation is 30 to 40 years with the need for rehabilitation becoming apparent when maintenance/repair parts were no longer available for key substation components.

The total project cost estimate is approximately **$4.6** million. In addition to the Rosendin Electric contract, other major cost elements include engineering/design ($346,000), the 15 kilovolt switchgear and control building ($699,297), adjacent property acquisition ($200,000), new remote terminal unit ($60,000) and substation testing/commissioning ($150,000).

Demolition/construction work began in earnest in October, 2007 at which time it was feasible to completely de-energize the substation following high summer electrical loads. It is critical that all rehabilitation work be completed prior to next summer and the project's timetable provides for such a result.

Tasks completed to date include acquisition/demolition of home at 543 East Locust Street, demolition of substation exterior wall, establishment of 24 hour security with perimeter alarms and fencing, demolition and removal of Control Building, sampling and removal of contaminated soil, delivery of Remote Terminal Unit (RTU), award for Indoor Metal Clad Switchgear completed with shipment planned by February 8, and installation of on-site storm drains and oil/sediment traps.

FISCAL IMPACT Total project cost is approximately $4.6 million.

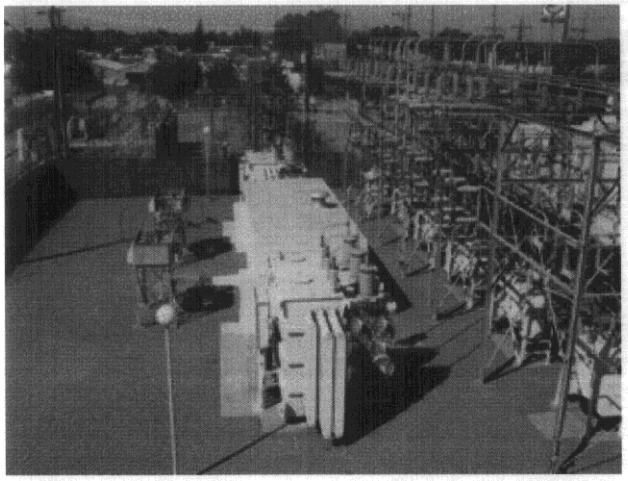
FUNDING: Not applicable.

George F. Morrow
Electric Utility Director

APPROVED: _____
Blair King, City Manager

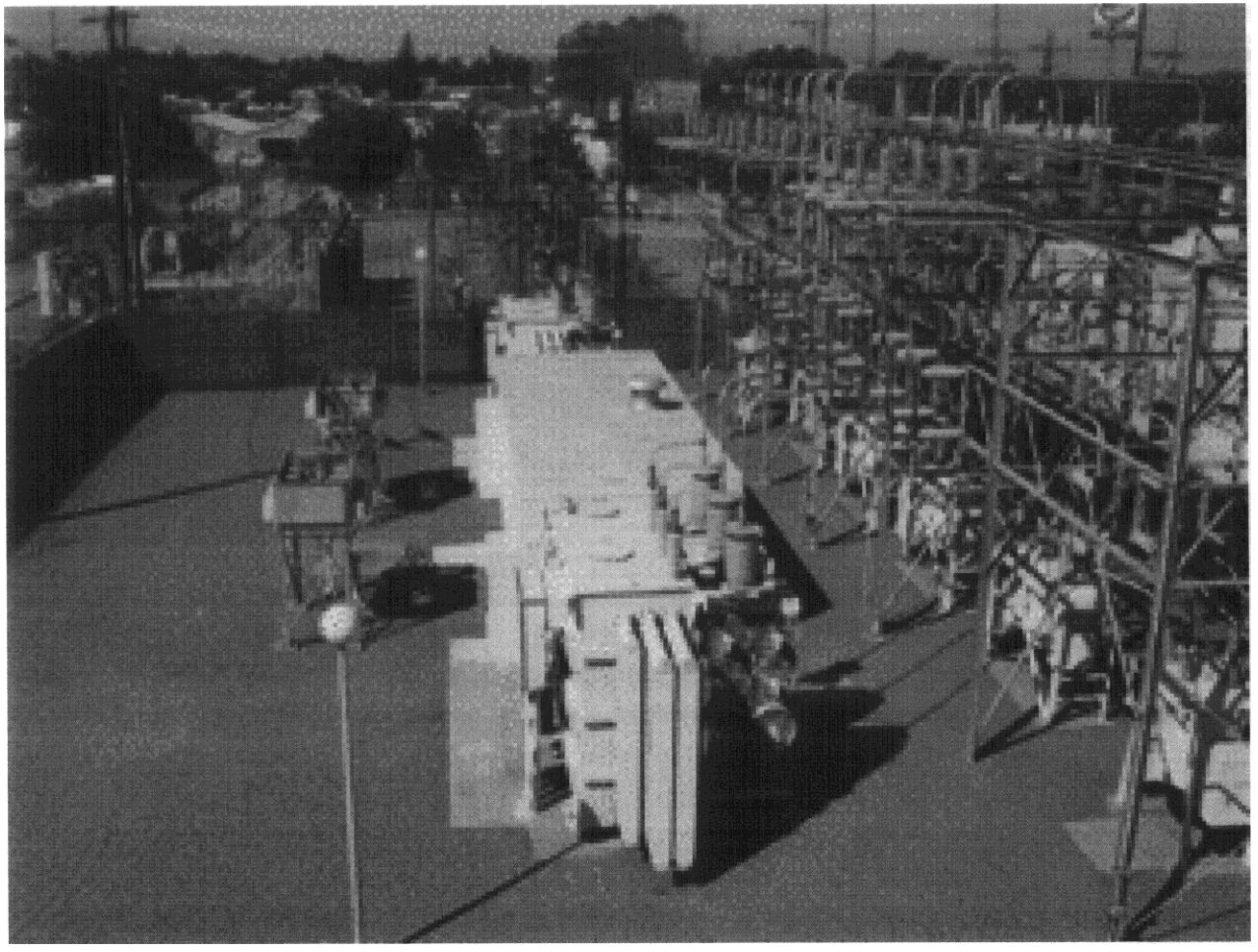
KILLARNEY SUBSTATION

Rehabilitation Project



City Council Shirtsleeve
December 18,2007

Old Substation Includes: 60kV Structure, Transformers, CB, SW & 12kV Switchgear



Preparation For Demolishing Part of the Old Substation

Residential House to be Demolished for Expansion of Substation

Preparing to Demolish the Residential House & the 12kV SW

Demolition of Residential House

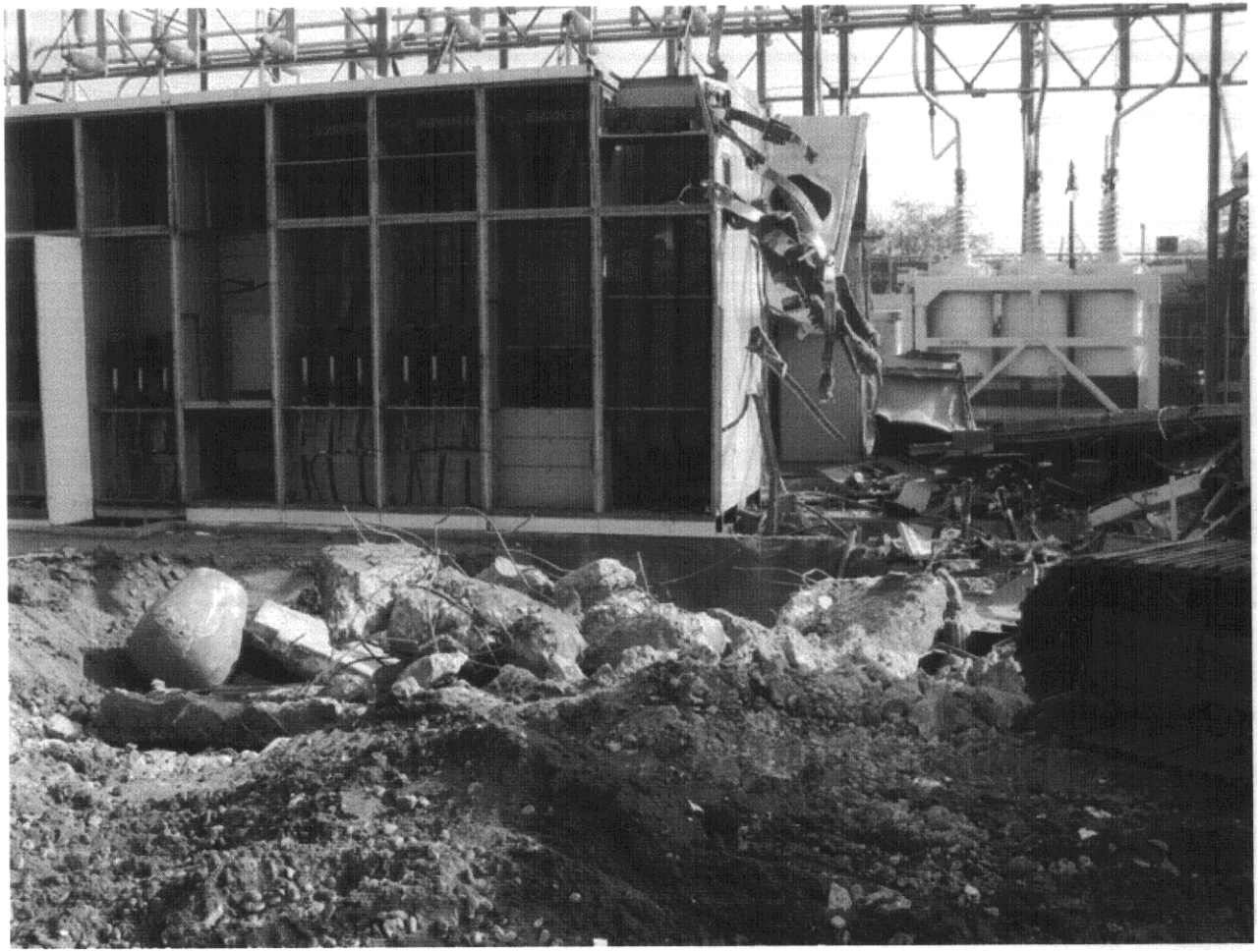
Demolition of Residential House

Demolished Residential House

Starting of Demolishing the 12kV SW

Demolishing of the SW

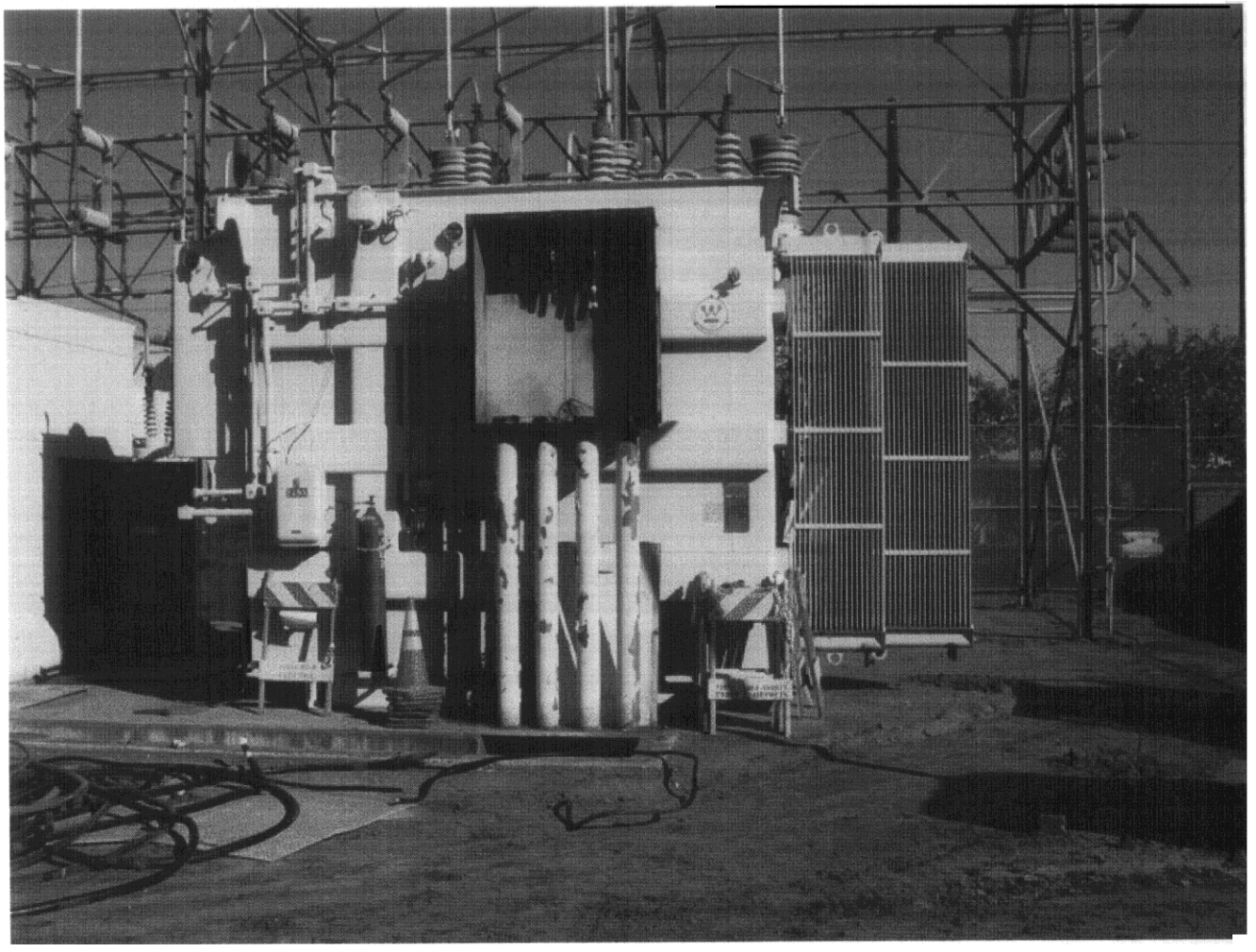
Demolishing of 12kV SW Continues



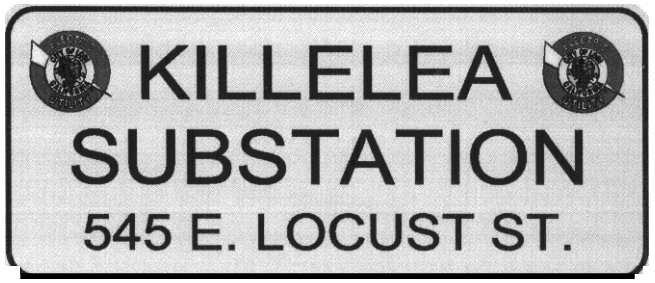
Demolishing of SW Continues

12kV SW &
its Foundation are Demolished

Transformer will Remain



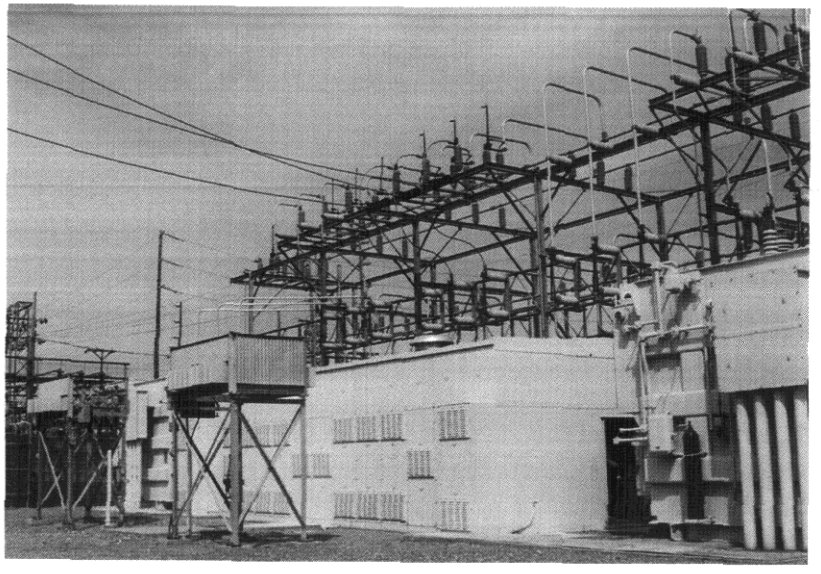
Preparation for the New 12kV SW Foundation & Trenching of Conduits Routes



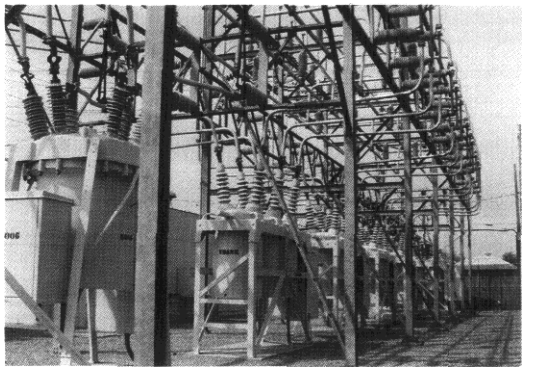
New Killelea Substation Sign

KILLELEA SUBSTATION

"REHABILITATION PROJECT"

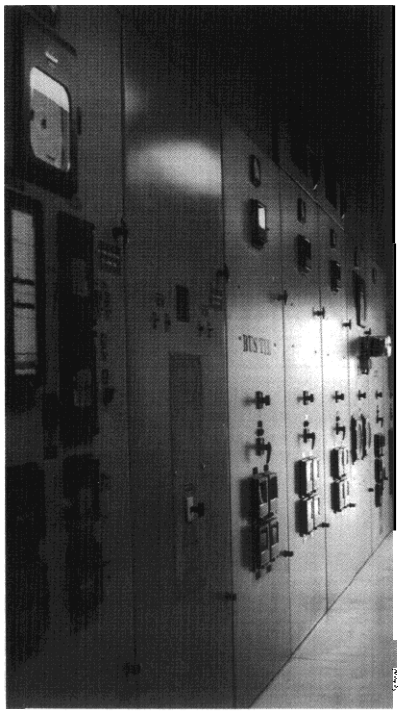


Killelea Substation is an existing facility located at 545 E. Locust Street in Lodi, California. The substation is currently in the process of rehabilitation. The newly reconstructed substation will occupy both the existing site and the recently acquired adjacent residential property. The substation facility is contained by Locust Street on the south, a paved alley on the north, an operating restaurant and parking area on the east, and a residential property located directly adjacent to and west of the demolished house structure.

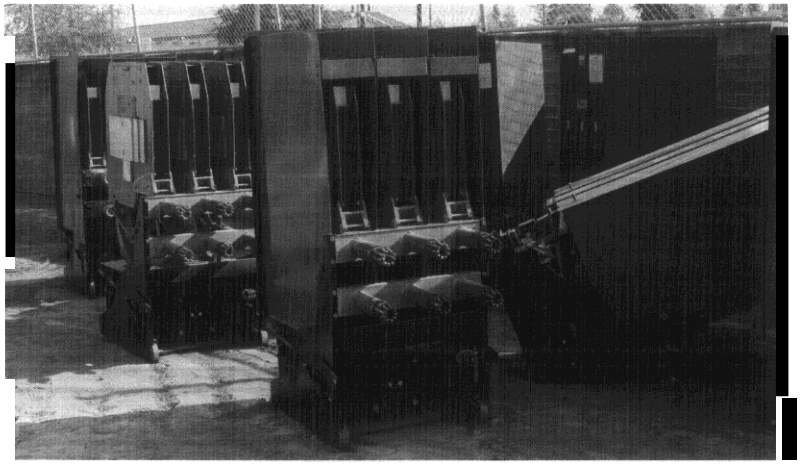


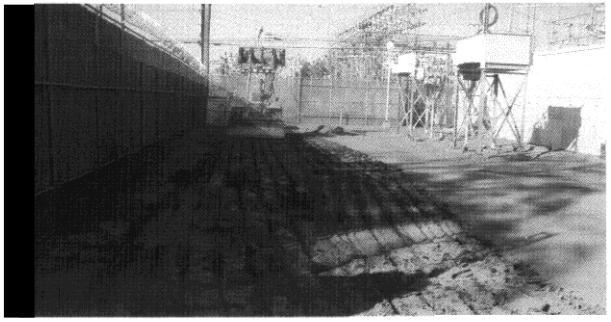
Originally, power was supplied to the City from the PG&E Lodi Substation through a 4kV distribution line to the waterworks (currently Parks & Rec). Between 1960 and 1962, the first substation facility of the City was built and later named Killelea Substation. To extend the distribution system to the City's customers, 12kV equipment was installed to accept power supply from the adjacent PG&E Lodi Substation. **A** regulator and switchgear systems were also added at that time. Between 1967 and 1969, the 60kV structure and equipment was installed including two power transformers which converted 60kV to 12kV for distribution. This made the Killelea Substation the main interconnection facility with PG&E through the 60kV transmission system. From 1979 to 1981, Transformer Bank #2 failed twice, requiring dismantling and a complete rebuild. Life extension kits were also installed in the 60kV breakers prolonging their useful life. Killelea Substation currently feeds the east side of the City, the downtown area including City Hall, the Public Safety Building, the Library, the Police Department as well as all downtown businesses. Initially it provided the power supply to large businesses in the City, such as General Mills and PCP.

Below are key technical factors considered during the rehabilitation project engineering and design:

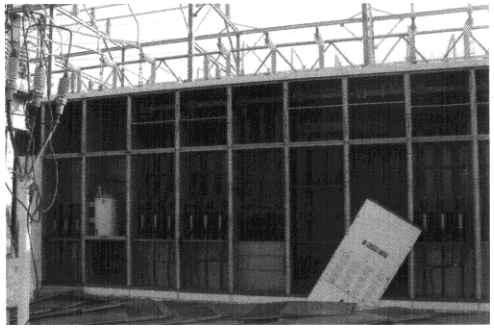


- **As** the 60kV lattice structure and tubular bus are reusable, they will be used in the new rehabilitation project.
- Reconfigure the 60kV system to a radial-tap arrangement and retaining only two (2) of the existing 60kV circuit breakers.
- The existing two (2) power transformers will remain but will require major maintenance and repair.
- The 12kV metal-clad enclosed switchgear is over 40 years old.
- The switchgear has seven 12kV feeders with **4,574** customers and a total connected load of 65,488 **KVA.**
- Customers served from Killelea Substation are to be connected to other substations until the completion of the rehabilitation project.

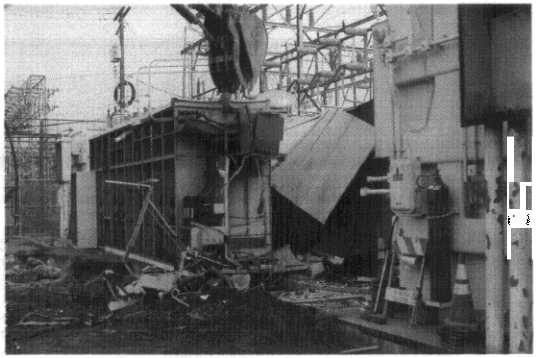


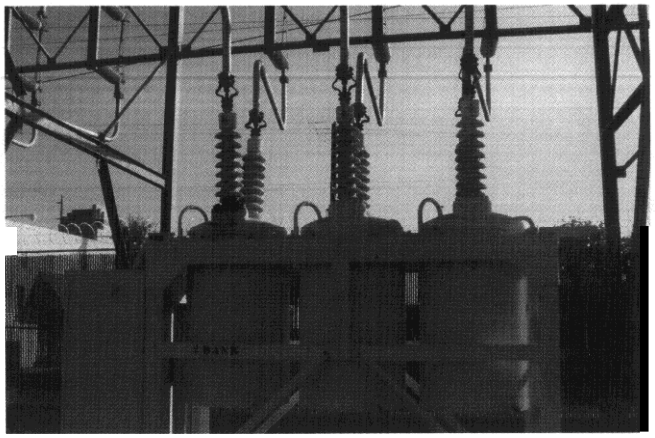


The rehabilitation of Killelea Substation will be constructed with minimum modification of the existing 60kV system. Only two (2) existing 60kV circuit breakers will be retained to feed the two (2) power transformers.

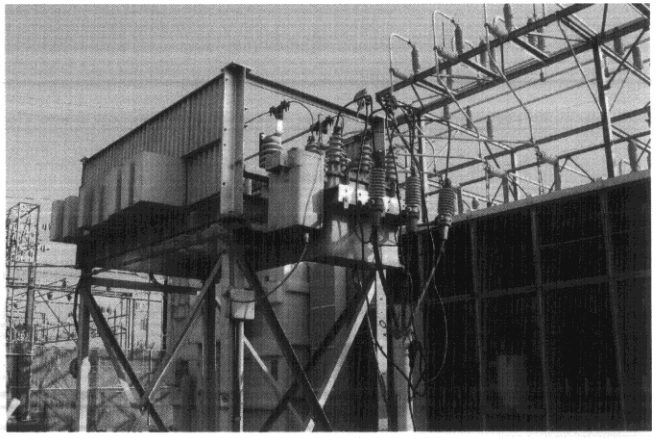


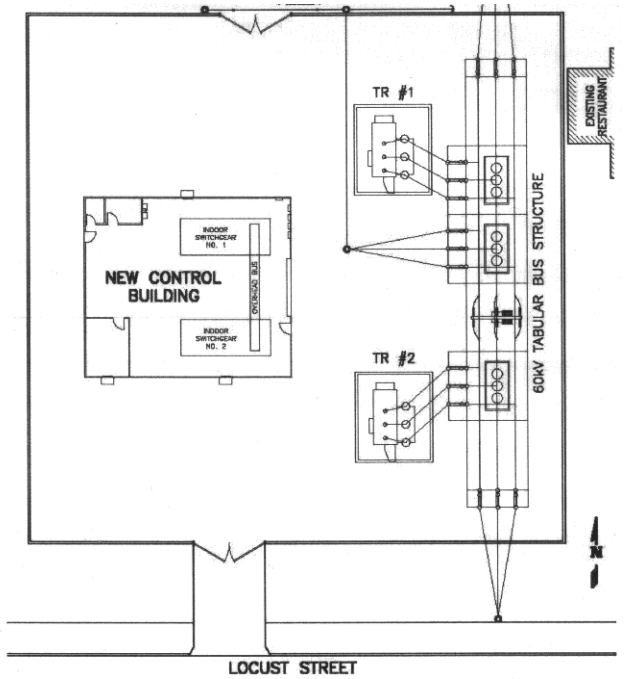
The existing two (2) 60kV disconnect switches facing McLane and Industrial Substations respectively will also remain in place. **A** new foundation, structure and one new switch will be installed in place of the existing bus tie circuit breaker. Some bus additions and modifications will be required. The existing 12kV switchgear, cable, conduit and miscellaneous equipment will be removed and disposed This includes removal and disposal of the existing switchgear building and foundation





The existing two (2) power transformers will remain in service including bus connections to the existing disconnect switches. **A** new control building will be constructed that will house the new 12kV indoor switchgear. It will have eight (8) 12kV feeders, with seven (7) active feeders and one (1) spare feeder for future **use.** New 12kV cable and conduit will be installed to the new 12kV switchgear. The project is currently under construction and is expected to be completed and energized by May 1, 2008. The completion of the project will provide a reliable and dependable control of the feeder circuits from the substation.





Due to the old switchgear design the whole station would have to be shut down and de-energized to provide maintenance. The new equipment is designed to attain better and safe accessibility for maintenance during operation. **As** the growth of the east side of the City was significant, Killelea Substation became a vital part of the City's electric system. Due to the age and deteriorated condition of the insulating material of the existing 12kV metal-clad enclosed switchgear, the likelihood of a failure becomes greater with each passing year. The design of the switchgear is such that a failure of one portion of the insulated bus likely would escalate throughout the entire switchgear making a failure imminent resulting in a total **loss** of the station. In addition, the manufacturer of the existing metal clad enclosed switchgear is no longer in business making parts extremely difficult and costly to locate. Therefore, to insure that the Killelea Substation is as reliable and dependable as required to meet the needs of the City, the Killelea Substation Rehabilitation Project was found to be the optimum solution.